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ABSTRACT

The public sector in Sweden is under pressure to augment its productivity and cut costs, and the education sector is faced with the same demands. Most people believe that adequately proportioned, efficiently operating schools are essential to Sweden's long-term economic development, but this is seldom mentioned in connection with spending cuts. In this project, researchers are therefore developing a computerized educational model of the connections between school and long-term economic development. In this newsletter, a collection of essays is described entitled "The Outward Efficiency of Schools--Description," which highlight demands and expectations of schools from three viewpoints: the pupil's view, the organizational view, and the socioeconomic perspective. Also discussed is the ideological vacuum surrounding schools today and the organizational solutions that may emerge from the current process of decentralization. The first stage of the project was to develop a competent reference and dialogue group. As a follow-up, two simple computer models of the interaction between school and the national economy were developed: a growth model and a financial model. During the next stage, researchers plan to test and further develop these models, making them not only simulation tools, but a form of training in macroeconomic theory. The project is scheduled for completion in fall 1988. (TE)

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SCHOOL RESEARCH Newsletter

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Current Project

TITLE OF PROJECT: THE OUTWARD EFFICIENCY OF SCHOOLS

The public sector is under heavy pressure to augment its productivity and cut costs. The education sector is being faced with the same demands. There are many activities which can be modified with relatively few problems, but is school one of them?

Most people agree that adequately proportioned, efficiently operating schools are essential to Sweden's long-term economic development. But this is seldom mentioned in connection with spending cuts. Why?

Are schools of so little political importance? Are cause-effect relationships too obscure?

In the project "The Outward Efficiency of Schools" we are trying to build up an educational, computerised model of the connections between school and long-term economic development. We are also discussing the ideological vacuum surrounding schools today and the organisational solutions which may emerge from the current process of decentralisation.

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- 1983:1 Evaluation of Courses of Study at Upper Secondary School (UTGY)
1983:2 The Research Programme of The National Swedish Board of Education
1983:3 Science Subjects - An Evaluation of Student Achievement and Attitudes in International Perspective (IEA Science II)
1983:4 Evaluation through follow-up of students (UGU)
1983:5 Analysis of teacher-directed experimentation
- 1984:1 Children with early perceptual functional disturbances. A follow-up during school years
1984:2 The SLAu Project: Project description
1984:3 Transition from compulsory and upper secondary school to further education or employment - the GUARANTEE project
1984:4 Vertical integration at junior and intermediate levels
1984:5 Learning to read
1984:6 Family support and development - a longitudinal, ecological study of families with children of pre-school and junior-level age (the FAST-Project)
1984:7 Study assistance and adult study assistance - utilisation and effects
1984:8 UTRES - Evaluation of resource utilisation in upper secondary schools
1984:9 MEDIA PANEL
- 1985:1 Creativity and communication: music and art education - The KROK-project
1985:2 Children's participation at junior level
1985:3 Programme for recurrent educational situation reports: school description models
1985:4 Discovery learning and cognitive development - the UKU-project
1985:5 Man in a changing society - MIS
1985:6 Systematic evaluation of the "forests in schools" project
1985:7 Evaluation of experimental concentration of studies in upper secondary school
1985:8 Pupils' working environment at school in use (EMILIA)
1985:9 Immigrant pupils at the senior level of compulsory school and in the upper secondary school
- 1986:1 Education - Society; Curricular theory
1986:2 IEA Written composition study
1986:3 UTRES - Evaluation of resource utilisation in upper secondary school
1986:4 Technology and science in school and society: Education, training, subsequent training
1986:5 Historical image and historical awareness
1986:6 Political and citizenship education in Swedish schools in the 20th century (the role and concept formation of social subjects)
1986:7 Feasibility of joint studies in adult education
1986:8 Studies of the innovation process in compulsory school
1986:9 Girls in science and technology
1986:10 Evaluation through pupil follow-up - the UGU project
- 1987:1 Young people and peace - prerequisites for peaceoriented instruction
1987:2 Functional opportunities of the school administration in municipalities with local agencies and free municipality experiments
1987:3 Steering strategies in a decentralised decisionmaking system
1987:4 The outward efficiency of schools

THE OUTWARD EFFICIENCY OF SCHOOLS - DESCRIPTION

1. Introduction

The role of education in economic development has been debated episodically, and with varying emphases, over a long period of time. With schools as with nearly all public production of services, the past few years have been dominated by reports of poor (or negative) productivity development during the past decade. So far this has not occasioned any major intervention.

On the whole, however, economic research into education, i.e. the subject field of educational economics, has occupied an obscure position in the economic sciences. Economists of different inclinations have shown little interest in the subject.

The NBE has tried in various ways to initiate research in the economics of education. One such attempt was made by commissioning Nils-Olof Christoffersson (NOC) to compile a problem inventory and to undertake a pilot study for a research programme in educational economics.

The documentation of this pilot study provides an extensive map of approaches to educational economics over the years and of the current position. It does not make very inspiring reading. NOC's discussion centres above all round the so-called human capital theory (HC theory).

The HC theory is the approach to educational economics which has acquired the largest number of concrete applications, both in Sweden and elsewhere. Very simply, an attempt has been made to calculate the profitability, from the viewpoint of both individual and society, of investments in various educational alternatives. The results have been relatively disheartening where most non-production-related educational programmes (especially the humanities) are concerned.

NOC is of the opinion that the HC approach ought to be turned down, and he himself suggests an extensively microbased approach, focusing on resource utilisation in the classroom.

This, to our mind, is an excessively defensive role for educational economics research in the present-day economic situation. The economy is now heading for major structural changes which will probably be reflected in the education sector.

Our project idea evolved round the following two points of inquiry:

- (1) What is the best way of identifying the big problems surrounding the role of schools in economic development today?
- (2) How does this in turn affect discussions of educational efficiency?

Given this approach, we preferred speaking in terms of "the outward efficiency of schools", i.e. the capacity of schools to cope with the world at large, as regards its changing demands and opportunities.

2. The essays

We chose to scrutinise the material compiled in connection with NOC's pilot study. We did so from three angles, described in the collection of essays entitled (in Swedish) "The Outward Efficiency of Schools".

- (1) From the pupil's vantage point, highlighting problems of legitimacy and new demands and expectations confronting schools.
- (2) From an organisational viewpoint, considering schools as an organisation with changed boundaries in relation to the outside world.
- (3) In a socio-economic perspective, discussing the role of schools in the post-industrial economy as an analytical/strategic problem, not just as a policy problem.

Of these perspectives, it was above all a combination of the socio-economic and the organisational with which we chose to proceed further. We did so using a multi-stage procedure.

3. The Dialogue Project

The first stage was to build up a competent reference and dialogue group. Work in this group was conducted partly in seminar form and partly by means of interviews and questionnaires.

A great deal of the discussion came to centre round the organisational, political and financial problems that schools would be facing in the future.

Decentralisation in Sweden today is a buzzword, in the educational sector just as elsewhere, and especially after the slimming down of the NBE. But most of the people involved feel that the decentralisation experiment is suspended in mid air. Although a concept like management by objectives is frequently bandied about, nobody can really give it any substance, because there is too much uncertainty about the objectives. This problem is compounded by educational questions in recent years having come a long way down on the political agenda. The reference group spoke of an "ideological vacuum" surrounding educational issues.

The growth of uncertainty makes for sensitive interest groupings in the school context. What today may appear to be compact support for a certain view of schools can change rapidly. There are possibilities of the ideological vacuum being filled by new interests.

Uncertainty regarding the political/ideological status of schools is mirrored by its financial or specifically organisational position.

Few people believe that Swedish schools will be the same in ten years' time as they are today. Most people in our reference group saw opportunities/risks connected with increasing dependence on or co-operation with enterprise, above all in terms of various types of co-operation developed locally. In the prevailing ideological vacuum, there are not many forces opposing such a development.

4. Schools and economic policy

Somebody in our reference group said: "Schools are governed from the Ministry of Finance, not from the Ministry of Education." This, of course, is a half-truth. Budget scrutiny will always influence the planning of activities but cannot define their objectives.

Relations between the different government departments and the different political fields in the Government and Riksdag (Parliament) always present problems, especially in times of budgetary deficits and cheese-paring.

The other government departments do not feel that their viewpoints are being given a hearing. What do people at the Ministry of Finance know about education, rural areas, the environment and so on? Similar arguments are put forward by the Ministry of Finance - the other people do not give a thought to expense.

We have come across this problem in several different connections. There is no simple solution to it, because there is an obvious competitive situation involved.

But our observations do lead us to believe that some progress can be made towards resolving conflicts if only the different parties can be induced to speak a common language, i.e. to find a common world picture.

In most cases this means trying to find ways of translating tax bases, export revenues, working population and so on into tons of pollution, student equivalents and so on, and vice versa, in both the short and the long term.

Where environmental questions are concerned, the concrete task is to translate the calculations of the Long-term Survey into tons of pollution at different points in the country and, furthermore, into the effects of this pollution and the expense which it generates in the longer term. The corollary means translating a more restrictive

environmental policy into rising costs, lost export revenues, employment changes, taxation effects, regional effects in the long term and short term, subject to various assumptions about new technology, and so on. And all these things have to be done in the same mechanical model world.

These ramifications in both directions provide a common platform on which to conduct a dialogue. The questions are not simplified, but they are made more distinct and exact. One can then concentrate on the "nitty gritty". A similar construction is conceivable where schools are concerned.

5. Model development - stage 1

As a direct follow-on from the Dialogue Project, we have therefore begun developing a couple of simple models for the interaction between school and the national economy. One of these is a growth model to capture the real interaction, and the other is a financial model to capture the interaction in budgetary terms at national and local (municipal) levels.

The central relationships in the growth model are the connection between educational investments and long-term productivity development and growth, and secondly, the development of productivity in the education sector and real resource sacrifice in the long and short terms in order to maintain different levels of education.

In the financial model we are examining the impact on national and local government finance of changes in GNP, inflation, State grants, the social insurance system, educational investments etc.

During this model development, we are proceeding with the firm intention of anybody at municipal or central level being able to use the models; in other words, the model system must be user-friendly. For this reason we have decided that the models are only to be developed in a rudimentary form for the time being, great care being devoted to making them accessible and instructional.

In purely concrete terms this means that we are testing different program environments. So far we have prepared BASIC versions of both models and LOTUS 1-2-3 versions of the growth model. By the summer of 1987 we will have a MODULA-2 version of the growth model, which will also include an advanced teaching section and auxiliary module.

We are convinced that the time we are devoting to accessibility and pedagogics is time well spent. No matter how refined a model may be, it will not be worth much if it remains unused because people find it inaccessible.

6. Model development - 2

During the next stage of the project we will

- (a) Test the finished programs on several potential users.
- (b) Develop the models themselves, above all by making econometric estimates of some of the central relationships.
- (c) Deepen the instructional element of the programs, i.e. try to achieve our aim of making them not only simulation tools but also a form of training in economic macro theory, national accounts etc.

The models will be tested on the people previously included in our reference group and (we hope) on a group of civics teachers. We have not yet decided in which schools and with which constructions these tests are to be carried out. All interested parties are welcome to get in touch with us. We have also contemplated testing the system on an upper secondary school civics class in connection with economics teaching.

As regards developing the models, we are above all concerned at present with refining different relationships. The central variable - the productivity enhancing properties of education - will have to be accurately estimated. Not that we believe they can be quantified

exactly, but we should gauge the intervals within which this variable produces plausible results.

Our ideas concerning a pedagogical deepening of the model system are above all concerned with vague ideas of building up an "expert system shell", within which we will attempt to capture the thinking habits of the economic expert. This would dovetail admirably with the lesson section integrated in the model system today. We imagine that an expert system could be constructed, for example, using the PROLOG language. Here again, of course, it will be interesting to test model versions in relation to teachers, pupils and potential users in the education sector.

7. Timetable

The project will be concluded in the autumn of 1988, by which time there will be a complete model system containing two simulation models - a real growth model and a financial model - both of which will have been constructed with a view to simple, stimulating use; in other words they will be an attractive shell for inputting and outputting and for the handling of computer runs, based on the models themselves. This shell will also include an integrated lesson section describing central economic concepts and theories.

It should be possible to distribute the program to interested parties at about the New Year 1989.

REFERENCES

So far the project has generated two interim reports:

The collection of essays "The Outward Efficiency of Schools", Bergström (Ed.), 1985. This may be available from the NBE. (In Swedish)

An essay on "Alternative Forms of Production for Education", published in "Skolan och vuxenutbildningen" - L3 86. SÖ, R 86:4. (In Swedish)

The report "The Outward Efficiency of Schools - A Pilot Study", Bergström & Wadeskog, 1986, SÖ R 86:55, summing up the first stage of the project, i.e. the work of the reference group. (In Swedish)

Nils Olof Christoffersson's studies, which prompted this project, are recorded in:

"Utbildningsekonomi - en forskningsöversikt" (Educational Economics - a research overview). SÖ 1982.
(In Swedish)

"Utbildningsekonomisk forskning - en symposierapport" (Research in the economics of education - a symposium report) SÖ 1982.
(In Swedish)

"Effektiv skola - förslag till ett forskningsprogram i utbildningsekonomisk mikroteori" (Educational efficiency - a draft programme of research in the microtheory of educational economics). SÖ 1984.
(In Swedish)

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